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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/057,205	01/25/2002	Sion C. Quinlan	500986.02	1725

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EXAMINER

GEYER, SCOTT B

ART UNIT	PAPER NUMBER
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2829

DATE MAILED: 12/22/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/057,205

Applicant(s)

QUINLAN ET AL.

Examiner

Scott B. Geyer

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 September 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 81-85 and 90-93 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 81-85 and 90-93 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 25 January 2002 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☒ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) other.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☒ Other: IDS papers: 0102, 0302, 0803.

DETAILED ACTION

Election/Restrictions

1. Applicant's election without traverse of claims 81-85 in Paper No. 0703 is acknowledged. Applicant has cancelled claims 1-80 & 86-89, and added claims 90-93.

Priority

2. Acknowledgment is made of applicant's claim for foreign priority based on an application filed in United Kingdom on November 7, 2001. It is noted, however, that applicant has not filed a certified copy of the priority application as required by 35 U.S.C. 119(b).

Information Disclosure Statement

3. The references cited on the IDS documents, received on January 26, 2002, March 25, 2002 and August 6, 2003, have been reviewed.

Drawings

4. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference sign(s) not mentioned in the description:

Figure 1: 100;

Figure 2: 210, 218 and 218₁₄;

Figure 4: 400, 402, 408 and 414;

Figure 5: 500 and 508;

Figure 6: 600, 606, 608 and 620;

Figure 7: 700, 706, 708, 710, 712 and 714.

A proposed drawing correction, corrected drawings, or amendment to the specification to add the reference sign(s) in the description, are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claims 81-85 and 90-93 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

6A. As to independent **claim 81**: the preamble of this claim recites “a method of ***electrically isolating*** modules within an integrated circuit package assembly”. However, the body of the claim recites ***conductively coupling*** the first module to a first conductive surface and conductively coupling the second module to a second conductive surface, wherein the drawings and specification describe the two conductive surfaces as a capacitor structure (along with the dielectric layer). The two modules are capacitively electrically connected to each other, and therefore are not electrically isolated. For purposes of examination, the examiner will assume claim 81 describes using a decoupling capacitor, and the preamble will not be given any patentable weight. Claims 82-84 are also rejected on the same grounds as claim 81, since they are dependent upon claim 81 and necessarily contain all of the limitations of claim 81.

6B. As to independent **claim 85**: the preamble of this claim recites “a method of ***electrically isolating*** modules within an integrated circuit package assembly”. However, the body of the claim recites forming a capacitor within the package assembly and ***coupling*** the first and second modules to the capacitor. Therefore, the two modules are capacitively electrically connected to each other, and therefore are not electrically isolated. For purposes of examination, the examiner will assume claim 85 describes using a decoupling capacitor, and the preamble will not be given any patentable weight. Claims 90-93 are also rejected on the same grounds as claim 85, since they are dependent upon claim 85 and necessarily contain all of the limitations of claim 85.

Claim Rejections - 35 USC § 102

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

8. Claims 85 and 90 are rejected under 35 U.S.C. 102(b) as being anticipated by IBM Technical Disclosure Bulletin (“Decoupling Capacitor Structure to Reduce FET Output Driver Switching Noise”, December 1, 1987), hereinafter referred to as “IBM-87”.

8A. As to **claim 85**, IBM-87 teach forming a decoupling capacitor within an assembly wherein a first module (i.e. FET module) 10 is attached to one side of the decoupling capacitor 14 and a second module (i.e. FET module) 12 attached to a second side of the decoupling capacitor 14, as can be clearly seen in figure 1.

8B. As to **claim 90**, IBM-87 teach the decoupling capacitor 14 and two modules 10 and 12 on the same side of a substrate, as can be seen by the top down view of figure 2.

9. Claims 85 and 93 are rejected under 35 U.S.C. 102(b) as being anticipated by IBM Technical Disclosure Bulletin ("Clipped Decoupled Twin-Carrier Module for IC Memory Chips", January 1, 1985), hereinafter referred to as "IBM-85".

9A. As to **claim 85**, IBM-85 teach forming a decoupling capacitor within an assembly wherein the capacitor 2 is coupled to the first and second modules 4 (i.e. chip modules) and is located between the two modules.

9B. As to **claim 93**, IBM-85 teach the capacitor 2 located between the first and second chip modules 4 (see figures 1 or 2).

Claim Rejections - 35 USC § 103

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. Claim 81-85 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lauffer et al. (5,027,253).

11A. As to **claims 81 and 85**, Lauffer et al. teach in figure 2 a module 235 attached to a substrate and a capacitor, having two conductive layers and a dielectric layer (numerals 125, 135, 151), attached beneath the substrate. The decoupling capacitor is conductively coupled to the module. Lauffer et al. do not specifically teach

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two modules attached to the first side of a substrate and coupled to the capacitor.

However, at the time of the invention, it would have been obvious to one of ordinary skill in the art to modify Lauffer et al. with a second module so as to increase the functionality of the package assembly (see also col. 1, lines 45 et seq.).

11B. As to **claims 82-84**, Lauffer et al. teach encapsulated packages, using polymers, ceramics or glass (see column 1, lines 7-21), which are all notoriously well known in the art of semiconductor manufacturing.

11C. As to claim 90, Lauffer et al. teach a module(s) attached to one side of a substrate and a capacitor attached to the other side of the substrate, as detailed above in the rejection for claim 85.

11D. As to claim 91, Lauffer et al. teach a module(s) attached to one side of a substrate and a capacitor attached *proximate* to the module(s), as detailed above in the rejection for claim 85.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Scott B. Geyer whose telephone number is (703) 306-5866 (*after January 13, 2004, the examiner may be reached at 571-272-1598*). The examiner can normally be reached on weekdays, between 10:00am - 6:30pm. E-mail: scott.geyer@uspto.gov

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kamand Cuneo can be reached on (703) 308-1233. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9318.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

SBG 12/4/03

SBG
December 4, 2003


EVAN PERT
PRIMARY EXAMINER